HOUSING IN THE 1980S: A REVIEW OF ALTERNATIVE FORECASTS

by

William C. Apgar, Jr.

Working Paper No. W83-2

Paper prepared as part of the Housing Futures Program, Joint Center for Urban Studies of MIT and Harvard University, revised July 1983.

Copyright © by the Joint Center for Urban Studies of MIT and Harvard University. All rights reserved.

ISSN No. 0275-2964

## Introduction

Between 1975 and 1979, a series of housing market forecasts predicted that the aging of the baby boom generation as well as the continuing need to upgrade the existing housing stock would spark record-level new construction activity in the 1980s. Researchers at the U.S. Forest Service, the Urban Institute, the National Association of Home Builders, and Data Resources, Inc., among others, published projections that new construction would add 24 to 28 million units to the housing stock over the decade. 1

The plunge of the housing industry into deep recession in the early 1980s caused many forecasting groups to reduce their estimates of total production for the decade, yet there is little reason to believe that the revised forecasts are any more accurate than those they replace. Like earlier projections, the more recent housing market forecasts fail to capture how demographic factors influence patterns of demand and, in particular, household growth. In addition, they take little account of factors that influence losses, conversions, and other forms of housing investment and disinvestment. Although existing models may forecast total housing market activity accurately, they have little chance of correctly identifying important trends in the composition of new construction by location, by size, or structure type.

This paper presents a baseline forecast of likely trends in house-hold formation and housing construction activity in the 1980s. Following an assessment of national trends, the paper presents

forecasts for each of nine census divisions and discusses important regional variations in household formation and new construction activity. The paper then compares the ability of selected housing market models to track changes in demographic patterns and uses of the existing inventory, and concludes with recommendations for a program of housing research and model development. Principal findings reported in this paper include:

- (1) Declines in the growth rate of households and in net losses imply that new construction plus mobile home shipments for the decade of the 1980s most likely will equal 18.9 million units but could be as low as 16.9 million units.
- (2) Forecasts of future housing consumption and investment activity require an understanding of how the existing housing stock adjusts to changing economic conditions. In failing to model losses and nonnew construction additions to the inventory, available forecasts provide an inadequate basis for assessing future trends in new construction activity.
- (3) Each of the forecasts surveyed in this paper attempts to estimate the growth of households by age of household head without explicitly modeling the family formation process. Characteristics of families and individuals other than age, however, are important determinants of household formation and housing choice. A more appropriate approach would be to project the number of families by type, and then to model the effects that income, housing prices, and other economic variables have on housing demand.

(4) It is feasible to construct an improved model for projecting future housing trends. The model must be sufficiently disaggregated to represent the way changes in family structure influence housing demand. Equally important, it must include sufficient detail to permit assessment of how changing economic conditions affect use of the existing inventory. Since characteristics of households and of the housing stock differ both across and within regions, a successful forecasting model must also contain spatial detail.

# Moving from the 1970s to the 1980s: A Baseline Forecast

By definition, changes in the total housing inventory must equal growth in the number of households plus changes in the number of vacant housing units. Similarly, growth in the total inventory must equal new construction activity (conventional new construction plus mobile home placements) less net losses (total losses less non-new construction additions). These simple definitions are widely used among housing market forecasters and provide a useful framework for comparing alternative projections.

In the decade of the 1970s, new construction added 20.9 million units to the total housing inventory. Accounting for net losses of 2.6 million units, these additions generated a 18.3 million units increase in the total housing stock for the decade. Although there has been much disagreement over the components of inventory change, it is clear that net losses in the 1970s were substantially lower than in the previous decade, i.e., 3.7 percent compared with 10.9 percent in

the 1960s. Moreover, the decline in net losses in the 1970s substantially reduced the level of new construction required to meet the growth of households and maintain a given level of vacant units.<sup>2</sup>

The dramatic reduction in net losses resulted from both a decline in gross losses and an increase in non-new construction additions. Gross losses from the conventional inventory (total units less mobile home and seasonal vacancies) fell from an estimated 10.7 percent over the 1960s to 7.6 percent during the 1970s. High losses among mobile home units, however, offset some of this reduction in gross losses from the conventional inventory. By the 1970s, mobile home losses were 19.0 percent of total losses, up substantially from the 6.3 percent recorded in the 1960s. The rise in mobile home losses reflects both the growth of these units as a percent of the total inventory and the fact that mobile homes tend to have shorter useful lives than conventional housing.

The increase in non-new construction additions to the inventory also reduced net losses in the 1970s. Conversion of single-family homes into two or more units, adaptive reuse of commercial and industrial structures as residences, and other changes to the existing inventory added at least 2.7 million, and more likely as many as 3.9 million, units to the stock. It should be noted that even the lower of these two estimates is still nearly twice the number of non-new construction additions that the Bureau of the Census reported for the period 1960-1970.

Despite declines in net loss rates over the past 20 years, analysts routinely assumed until recently that the high loss rates of the

1960s would continue into the 1980s. For some areas, this was a valid assumption, i.e., in the central cities of the Northeast and North Central regions. For the remaining portions of the country, however, loss rates dropped sharply. Failure to distinguish this trend seriously distorted forecasts for the 1980s. As Table 1 shows, the National Association of Homebuilders forecast that net losses in the current decade would equal 12.3 million units, while the U.S. Forest Service, Data Resources, Inc., and John Weicher projected loss levels between 6.9 to 9.0 million units. Although these estimates are plausible relative to the experience of the 1960s when net losses totaled 6.6 million units, they seem unrealistically high in light of the fact that net losses in the 1970s fell to only 2.7 million units.

Housing market forecasters did little better in capturing trends in household formation. After growing steadily in the 1950s and 1960s, household headship rates soared in the early 1970s. As the baby boom aged, the number of adults rose rapidly; the probability that any given adult would form an independent household also increased. Although analysts began to note the change in household formation rates as early as the 1960s, they failed to anticipate how rapidly headship rates would rise and therefore how rapidly the number of households would grow. 4

Given the continued growth in headship rates in the early and mid-1970s, the Census Bureau revised its forecasts of household formation three times between 1975 and 1979. While using different time periods and assumptions to form their extrapolations of headship rates, their most recent and most widely used projection places household growth in

Table 1

EARLY FORECASTS OF HOUSING IN THE 1980S (Thousands of Units)

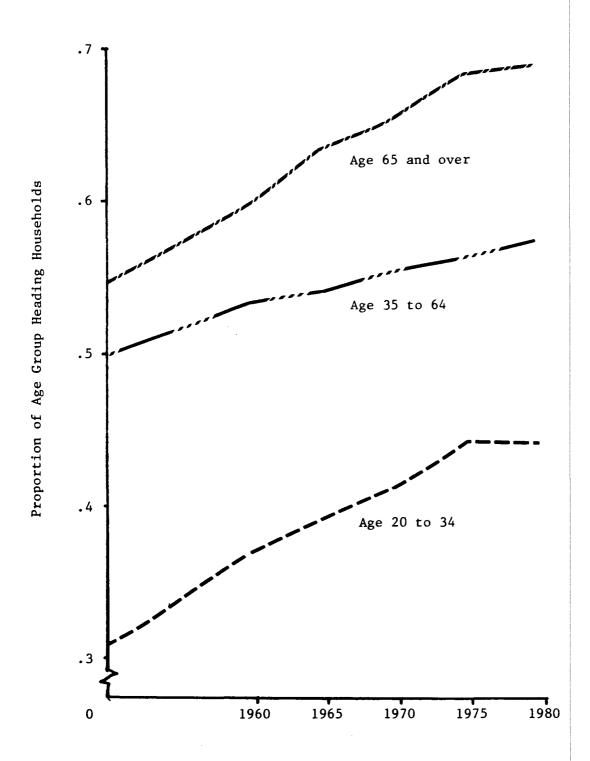
| Forecaster                                    | Household<br>Formation | Additional<br>Vacancies | Growth of<br>Total Inventory | Net<br>Losses | New<br>Construction |
|---|------------------------|-------------------------|------------------------------|---------------|---------------------|
| National Association<br>of Homebuilders, 1975 | 11,400                 | 3,900                   | 15,300                       | 12,300        | 27,700              |
| Thomas Marcin,<br>U.S. Forest Service, 1977   | 14,580                 | 1,600                   | 16,180                       | 9,070         | 25,250              |
| Data Resources, Inc.<br>1978                  | 16,000                 | 1,600                   | 17,600                       | 006*9         | 24,500              |
| John Weicher,<br>Urban Institute, 1980        | 16,940                 | 1,850                   | 18,790                       | 7,960         | 26,750              |
| •   |                        |                         |                              |               |                     |

Outlook for Housing by Type of Unit and Region: 1978 to 2000 (Madison, Wisconsin: U. S. Forest Service, Forest Products Laboratory, 1977); John Weicher, Lorene Yap and Mary S. Jones, Metro-Senate, Committee on Banking, Housing and Urban Affairs, Estimates of Housing Needs (Washington, D.C.: U.S. Government Printing Office, September 1975); Robert Gough and Robin Siegel, "The Fundamentals of Long-Run Housing Demand," Data Resources Review, Spring 1978; Thomas C. Marcin, SOURCES: National Association of Homebuilders, "Housing Requirements for 1975-1990," in U.S. politan Housing Needs for the 1980s (Washington, D.C.: The Urban Institute Press, 1982). the 1980s at 16.8 million. Several forecasters—including the U.S. Forest Service in 1977, and Data Resources, Inc. in 1978—followed the lead of the Census Bureau and also revised their projections upwards. Like the Census Bureau, each of these forecasts assumed that headship in the 1980s would continue to grow at rates experienced in the late 1960s and early 1970s.

More recent data suggest that this is unlikely. As Figure 1 shows, crude headship rates for the age group 20-34 have remained virtually constant since 1975. For those aged 25-34, the headship rate only increased from 49.7 percent in 1975 to 49.9 percent in 1982. Among the 20-24 age group, the 1982 headship rate was up slightly to 15.0 percent from the 1975 figure of 14.6 percent.

In their detailed analysis of household formation, John Pitkin and George Masnick of the MIT-Harvard Joint Center for Urban Studies examined forces leading to a diminished growth in headship rates. This research examines the probability of individual family nuclei—i.e., families or other groupings of related individuals such as a single-parent and children—forming separate households. While many analysts focus on the effect of age in the decision to head a household, Pitkin and Masnick suggest that other important factors in the choice include marital status and the presence or absence of children. Other things being equal, a woman with young children, for example, is more likely to maintain a separate household than a childless woman. Headship probabilities differ according to whether a woman is widowed, divorced, or never married. In short, the Pitkin and Masnick analysis demonstrates that demographic characteristics have important implications for future growth of households.

FIGURE 1
Headship Rates by Age Class, 1950-1980



SOURCE: Census of Population, 1950 and 1960; Current Population Reports, Series P-20 and P-25, selected numbers.

This slowdown in the growth in headship rates among young adults is noteworthy in that this age group contributed to much of the increase in total households in the late 1960s and early 1970s. Indeed, slower growth in headship rates is a central ingredient in the Joint Center's forecast of diminished household growth for the next two decades. During this period, the average annual increase in number of households will fall from the 1.5 million level forecast for the 1980s to 1.1 million in the early 1990s, and close to 1.0 million by the end of the century.

Table 2 compares a baseline forecast for the 1980s consistent with these trends and the levels experienced in the 1970s. The baseline forecast assumes that 14.8 million households will form over the 1980s, a substantial decline from the 16.8 million in the previous decade. Assuming that the occupancy rate holds constant at the 1980 level of approximately 91 percent, the slowdown in household growth will produce an equally pronounced drop in the growth of vacant units. If losses continue at rates observed in the period 1975-1980 and non-new construction additions continue to provide the same share of total additions as they did in the 1970s, the baseline forecast places gross losses for the decade at 6.1 million units, non-new construction additions at 3.4 million units, and net losses at 2.6 million units. The forecast of reduced household formation and reduced inventory losses implies that new construction will equal but 18.9 million units, including about 2.7 million mobile home placements.

Changing economic conditions could, of course, modify both household formation rates and net loss rates. With the sluggish economy

Table 2

HOUSEHOLD FORMATION, CHANGE IN TOTAL AND VACANT HOUSING STOCK,
NET LOSSES, AND NEW CONSTRUCTION PLUS MOBILE HOME SHIPMENTS:
1970-1980 (ACTUAL) AND 1980-1990 (FORECAST)

|   |                         | al 1970s                                      | Forec                   | ast 1980s                                     |
|---|-------------------------|---|-------------------------|---|
|   | Millions<br>of<br>Units | As Percent of<br>Beginning of<br>Decade Stock | Millions<br>of<br>Units | As Percent of<br>Beginning of<br>Decade Stock |
| Initial Period<br>Stock                           | 70.18                   | 100.0%  | 88.56                   | 100.0%  |
| Household<br>Formation                            | 16.80                   | 23.9  | 14.84                   | 16.8  |
| Additional<br>Vacancies                           | 1.59                    | 2.3   | 1.43                    | 1.6   |
| Growth of<br>Total Stock                          | 18.38                   | 26.2  | 16.27                   | 18.4  |
| Net Loss:   | 2.56                    | 3.7   | 2.63                    | 3.0   |
| Gross Loss  | 6.50                    | 9.3   | 6.07                    | 6.9   |
| Non-new<br>Construction<br>Additions              | 3.94                    | 5.6   | 3.44                    | 3.9   |
| New Construction<br>Plus Mobile<br>Home Shipments |                         | 29.8  | 18.90                   | 21.3  |
| End of Decade<br>Stock                            | 88.56                   | 126.2   | 104.83                  | 118.4   |

SOURCE: Joint Center forecasts, June 1983.

and low levels of household formation recorded in the early 1980s, the estimate of 14.8 million new households could be too high; a period of vigorous and sustained economic growth, however, could push household growth to 15.8 million. Alternatively, net losses could increase in the 1980s. Strong economic growth, together with the continued shift of households from city to suburb and from frostbelt to sunbelt could raise loss rates. While it is unlikely that they will ever return to 1960s levels, it is possible that net losses could increase to a decade rate of 4.0 percent.

As in Table 3 shows, only a high level of household formation together with a return to high levels of net losses would produce new construction plus mobile home shipments that would equal or exceed the number achieved in the 1970s. A more likely estimate of new construction activity in the 1980s is 18.9 million units, or 10 percent lower than in the previous decade. Moreover, housing production could fall even further if household growth fails to reach the most likely level of 14.8 million.

Despite this pessimistic assessment for the decade as a whole, it is important to note that housing production will increase sharply from the depressed levels experienced between 1980 and 1982; sustaining higher production levels into the late 1980s and 1990s, however, will be difficult. As the baby boom generation ages, household formation rates and housing construction activity will begin a downward drift that will last until the year 2000. As discussed in the section below, moreover, not all the regions of the country will share equally in housing production.

Table 3

NEW CONSTRUCTION PLUS MOBILE HOME PLACEMENT
FOR THE 1980s
(Millions of Units)

|                        |                    | Net Loss Rate              |                     |
|------------------------|--------------------|----------------------------|---------------------|
| Household<br>Formation | Low<br>2.0 Percent | Most Likely<br>3.0 Percent | High<br>4.0 Percent |
| Low                    |                    |                            |                     |
| 13.8 million           | 16.9               | 17.8                       | 18.7                |
| Most Likely            |                    |                            |                     |
| 14.8 million           | 18.0               | 18.9                       | 19.8                |
| High                   |                    |                            | :                   |
| 15.8 million           | 19.1               | 20.0                       | 20.9                |

SOURCE: Joint Center forecasts, June 1983. Most likely forecast for new construction plus mobile home placements is 18.9 million. Other forecasts are for discussion purposes only.

# Regional Trends in Housing Construction

The regional variation in household growth observed in the 1970s is expected to continue in the 1980s. As Table 4 shows, the population of the Northeast grew by only 94,000 in the 1970s, with the New England states gaining 506,000 people and the Mid Atlantic states losing 412,000. While the large central cities of the Northeast had been decreasing in population since the 1950s, by the 1970s numerous inner suburban areas were also losing residents. Joint Center projections suggest that with the State of New York leading the way, population in the Mid Atlantic states will decline by as much as 6.4 percent in the 1980s. Almost no population growth is forecast for the East North Central states, as well. Having grown by only 3.5 percent in the 1970s, the population of these states is likely to increase by only 1.2 percent over the current decade.

The population in the sunbelt, in contrast, is projected to grow significantly faster than the national average. Relative to the 1970s, however, the rate of population growth will decrease somewhat in the Pacific and Mountain states and more sharply in the South Atlantic states. The West South Central and East South Central states are projected to experience the largest absolute population increase of 6.3 million.

Although population growth is a major determinant of household growth, the number of households can increase at a greater rate than the number of people if average household size continues to decline. As the data in Table 5 indicate, the rate of household growth in the 1970s exceeded the rate of population growth in each of the nine

Table 4

POPULATION GROWTH BY REGION:
1970-1980 (ACTUAL) AND 1980-1990 (FORECAST)

|                    | Po      | pulation | (000s)   | Decade G  | rowth | Rate  |
|--------------------|---------|----------|----------|-----------|-------|-------|
| Region             | Actual  | Actual   | Forecast | Actual    | Fore  | ast   |
| Census Division    | 1970    | 1980     | 1990     | 1970-1980 | 1980- | -1990 |
| Northeast          | 49,041  | 49,135   | 47,707   | 0.2%      | -2.9  | 2     |
| New England        | 11,842  | 12,348   | 13,142   | 4.2       | 6.    |       |
| Mid Atlantic       | 37,199  | 36,787   | 34,562   | -1.1      | -6.   |       |
| North Central      | 56,572  | 58,854   | 61,274   | 4.0       | 4.    | 1     |
| East North Central | 40,253  | 41,670   | 42,151   | 3.5       | 1.    |       |
| West North Central | 16,319  | 17,184   | 19,123   | 5.3       | 11.   |       |
| South              | 62,795  | 75,353   | 89,921   | 20.0      | 19.   | .3    |
| South Atlantic     | 30,671  | 36,943   | 41,785   | 20.5      | 13    | .1    |
| East South Central | 12,803  | 14,663   | 18,079   | 14.5      | 22    | .8    |
| West South Central | 19,321  | 23,747   | 30,057   | 22.9      | 26    |       |
| West               | 34,805  | 43,165   | 52,949   | 23.9      | 22    | .7    |
| Mountain           | 8,282   | 11,368   | 15,416   | 37.2      | 35.   | 6     |
| Pacific            | 26,523  | 31,797   | 37,533   | 19.8      | 18.   |       |
| <b>Total</b>       | 203,212 | 226,505  | 251,848  | 11.4      | 11.   | 2     |

SOURCE: U.S. Bureau of Census, 1980 Census of Population, Standard Metropolitan Statistical Areas - 1980, Supplementary Reports PC80-S1-5 (Washington, D.C.: U.S. Government Printing Office, 1981) and Joint Center projections, June 1983.

Table 5

COMPARISON OF POPULATION AND HOUSEHOLD GROWTH:
1970-1980 (ACTUAL) AND 1980-1990 (FORECAST)

|                        | 1970-                     |       | 1980-                     | 1990  |
|------------------------|---------------------------|-------|---------------------------|-------|
| Region Census Division | Population<br>Growth Rate |       | Population<br>Growth Rate |       |
| Northeast              | 0.2%                      | 12.4% | -2.9%                     | 4.5%  |
| New England            | 4.2                       | 19.5  | 6.4                       | 15.5  |
| Mid Atlantic           | -1.1                      | 10.3  | -6.4                      | 0.8   |
| North Central          | 4.0                       | 18.8  | 4.1                       | 10.8  |
| East North Central     | . 3.5                     | 18.2  | 1.2                       | 8.0   |
| West North Central     | . 5.3                     | 20.1  | 11.3                      | 17.4  |
| South                  | 20.0                      | 37.1  | 19.3                      | 27.1  |
| South Atlantic         | 20.5                      | 39.0  | 13.1                      | 21.7  |
| East South Central     | . 14.5                    | 29.8  | 22.8                      | 30.8  |
| West South Central     | 22.9                      | 39.0  | 26.6                      | 33.5  |
| West                   | 23.9                      | 39.2  | 22.7                      | 28.9  |
| Mountain               | 37.2                      | 58.1  | 35.6                      | 42.8  |
| Pacific                | 19.8                      | 33.7  | 18.0                      | 24.1  |
| Total                  | 11.4%                     | 26.4% | 11.2%                     | 18.3% |

SOURCE: See Table 4.

census divisions. Even in the Mid Atlantic region, which lost population in the 1970s, the number of households grew by 10.3 percent.

In the future, households will continue to increase at a faster rate than population, but the difference will be less pronounced. While the projected population increase of 11.2 percent is practically identical to that experienced in the 1970s, the household growth rate is projected to drop from the 1970s figure of 26.4 percent to 18.3 percent. Even sharper declines are forecast for selected regions: in the Mid Atlantic states, for example, household growth is projected to fall from 10.3 percent to under 1.0 percent. Although still above average, the household growth rate in the South Atlantic and Pacific states will drop as well, reflecting the slowdown in population growth in Florida and California.

The flow of population and households away from selected frostbelt states suggests that the Northeast and North Central regions will capture smaller shares of national housing market activity. As indicated in Table 6, the biggest declines in the shares of total housing production will occur in the Mid Atlantic and East North Central states. In contrast, both New England and the West North Central divisions will experience slight increases in their shares of total new housing production. As a whole, the Northeast and North Central regions will capture 27.7 percent of new construction plus mobile home placements in the 1980s, down from 33.9 percent in the 1970s.

As household growth slows, forecasts of total construction activity are increasingly influenced by forecasts of the other components of inventory change, i.e., changes in vacancies, losses, and non-new

Table 6

PERCENT DISTRIBUTION OF HOUSEHOLD GROWTH AND NEW CONSTRUCTION PLUS MOBILE HOME SHIPMENTS BY REGION: 1970-1980 (ACTUAL) AND 1980-1990 (FORECAST)

| Region             | Househo]  | ld Growth | New Constru<br>Mobile Home |           |
|--------------------|-----------|-----------|----------------------------|-----------|
| Census Division    | 1970-1980 | 1980-1990 | 1970-1980                  | 1980-1990 |
| Northeast          | 11.5%     | 5.3%      | 11.8%                      | 8.5%      |
| New England        | 4.2       | 4.5       | 3.6                        | 4.2       |
| Mid Atlantic       | 7.3       | 0.7       | 8.2                        | 4.3       |
| North Central      | 19.7      | 15.3      | 22.1                       | 19.2      |
| East North Central | 13.5      | 8.0       | 14.7                       | 11.3      |
| West North Central | 6.2       | 7.3       | 7.4                        | 7.9       |
| South              | 42.8      | 48.9      | 42.4                       | 45.9      |
| South Atlantic     | 22.0      | 19.4      | 21.5                       | 19.4      |
| East South Central | 6.9       | 10.6      | 7.5                        | 9.5       |
| West South Central | 13.9      | 18.9      | 13.4                       | 17.0      |
| West               | 26.1      | 30.6      | 23.7                       | 26.4      |
| Mountain           | 8.7       | 11.7      | 8.1                        | 9.9       |
| Pacific            | 17.4      | 18.9      | 15.6                       | 16.5      |
| Total              | 100.0%    | 100.0%    | 100.0%                     | 100.0%    |
| Number (thousands) | 16,800    | 14,840    | 20,935                     | 18,897    |

SOURCE: See Table 4.

construction additions. In the Mid Atlantic region, for example, households will increase by only 110,000 in the 1980s, but new construction for the decade will equal 812,000 units; this discrepancy is largely due to the fact that new construction is needed to offset the nearly 1 million units that will be lost during the decade. In forming these estimates, it was assumed that the vacancy rate would remain unchanged, an assumption consistent with historical experience. As household growth slows to near zero in this division, however, it is possible that vacancies will increase. If the vacancy rate for the Mid Atlantic states were to rise by one percent, the housing stock (and hence new construction) would have to increase by an additional 140,000 units.

### Review of Alternative Forecasts

Forecasts of housing consumption and investment activity require an understanding of the way in which both households and the housing stock adjust to changing economic conditions. New construction adds but a small increment each year to the total housing inventory. Even after a decade of record-level new construction activity, four out of every five American households in 1980 lived in a unit that existed in 1970. The location, quality, and other characteristics of the current inventory thus play an important, although frequently ignored, role in shaping housing market trends.

Demographic characteristics and household formation patterns also influence housing market behavior. The formation of new households and the composition of existing households depend not only on economic

factors governing the cost and availability of housing, but also on social norms such as marriage rates, divorce rates, and the age at which children leave their parents' homes. Like the characteristics of the existing housing stock, the current characteristics of families and households have important implications for the future.

In attempting to capture the many economic and social factors that influence housing investment and consumption decisions, housing analysts employ a variety of techniques ranging from simple trend-line extrapolations to complex simultaneous equation models. The work of the ten forecasting groups listed in Table 7 illustrates this diversity. Researchers at Data Resources, Inc. (DRI), for example, employ one of the largest and most complex macroeconomic models of the national economy in use today, yet supplement the results of this model with simple trend-line forecasts. The same is true for Morgan Stanley and Company, whose housing forecasts are based in part on the results of the national macroeconomic model of Townsend Greenspan, Inc. and in part on supplementary analyses of factors not included in the national model.

Although it is useful to think about housing in the context of the national economy, macroeconomic models typically contain only limited detail about the housing sector. The DRI model, for example, forecasts single-family and multi-family housing starts and mobile home placements for the next 25 years, but not of the number and composition of households living in these units. To supplement their national models, analysts at DRI and elsewhere have therefore developed special housing sector models. The Regional Data Associates

Table 7

# SELECTED HOUSING MARKET FORECASTS

| Forecasting Group   | Recent Publications   |
|---|---|
| Advance Mortgage Corporation  | "U.S. Housing Markets," July 31, 1981.  |
| Data Resources, Inc.  | "Realities of Long-run Housing Demand," Data Resources U.S. Long-Term Review, Fall 1981.  |
| Anthony Downs   | Search for Space: Rental Housing in the 1980s, draft report, Summer 1982.   |
| Thomas C. Marcin<br>Forest Products Laboratory  | "Outlook for Housing by Type of Unit and Region: 1978 to<br>2020," U.S.D.A. Forest Service Research Paper, 1977.  |
| Morgan Stanley and Company  | "Outlook for Timber Supply/ Demand through 1990," text of speech delivered by Thomas P. Clephawe to Workshop on Financing Forestry Investment, Duke University, May 10, 1982. |
| National Association of Homebuilders  | "The Eighties: After a Slow Start, Some Very Good Years," Builder, January 7, 1980.   |
| Regional Data Associates<br>Kenneth Rosen and Dwight Jaffee<br>University of California, Berkeley<br>Princeton University | "The Demand for Housing and Mortgage Credit: The Mortgage<br>Credit Gap Problem," paper prepared for FNMA Symposium on<br>Housing Finance in the Eighties, February 1981.     |
| George Sternlieb and James W. Hughes<br>Rutgers University  | "Housing: Past and Future," paper prepared for FNMA Sympo-<br>ium on Housing Finance in the Eightles, February 1981.  |
| John Weicher, Lorene Yap,<br>and Mary Jones<br>The Urban Institute  | Metropolitan Housing Needs for the 1980s (Washington, D.C.:<br>The Urban Institute, 1982).  |
| U.S. Bureau of the Census   | "Projections of the Number of Households and Families: 1978-1995," Current Population Reports, P-25, May 1979.  |
|   |   |

model, initially developed by Kenneth Rosen and Dwight Jaffee, is an example of this type, as are the models of Thomas Marcin of the U.S. Forest Service, John Weicher of the Urban Institute, and researchers at Advance Mortgage Corporation.

Taking as given certain parameters about the future of the national economy, each model nonetheless emphasizes different aspects of the housing market. The most recent version of the RDA/Rosen/
Jaffee/ model, for instance, incorporates considerable detail about housing finance and includes a simple model of household formation, but treats as exogenous the rates of net loss to the existing inventory. In contrast, Weicher does not attempt to model household formation but uses the available Census Bureau forecasts; he focuses instead on modeling the components of inventory change, including losses. Marcin pays more attention to the details of the household formation process than RDA/Rosen/Jaffe, but less attention than Weicher to the details of housing inventory adjustment.

In addition to these formal models, many analysts make qualitative assessments of the future of the housing industry. As part of the multi-year study on urban decline and the future of the American city, Anthony Downs of the Brookings Institution has developed estimates of likely trends in housing construction and investment. Downs combines the Census Bureau forecasts of household formation with independent economic analyses of inventory adjustment to form alternative forecasts of housing market activities. George Sternlieb takes a similar approach in his work on multi-family housing demand. Without the benefit of formal models (or perhaps because they were not bound to

the limitations of a single model), both Downs and Sternlieb offer far-ranging and frequently insightful comments about future housing market dynamics.

To varying degrees, however, housing market forecasters seek to assess the demographic, economic, technological, social, and political factors that affect housing consumption and investment. While it is of course difficult to develop a single model that incorporates all of these complex interactions, current forecasting efforts seem particularly deficient in tracking changes in demographic patterns and in the use of the existing inventory. The next section assesses alternative forecasts of household formation, while the subsequent section evaluates alternative forecasts of the components of inventory change. This review suggests that existing projections of housing market activity are built on the most tenuous of foundations.

# Forecasts of Household Formation

The 1970s recorded unusually rapid growth in the number of house-holds and a marked shift in household composition. Between 1970 and 1980, the number of households increased by 16.8 million, compared with 10.6 million in each of the previous two decades. While fore-casters expected households to increase in number in the 1970s because of the "arrival" of the baby boom generation into the prime household formation age groups, many analysts, including those at the Census Bureau, failed to anticipate the rapid increases that occurred in the fraction of adults heading households. With growth in income and more generous federal housing programs, more individuals were able to

maintain independent households. When actual household growth in the 1970s exceeded expectations, the Census Bureau revised its projections for the 1980s upward. The most recent revision, issued in 1979, estimates that the number of households will increase between 13.0 to 18.8 million, with the "most likely" estimate being 16.8 million.

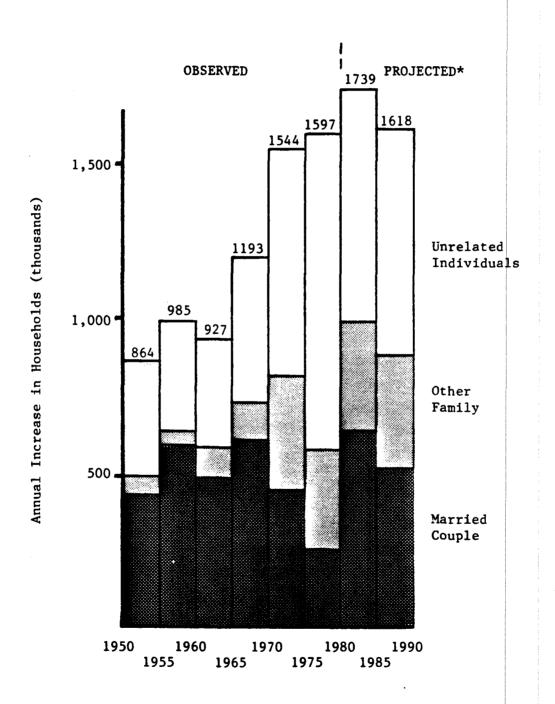
A dramatic change also occurred in the composition of families and households in the 1970s. In 1950, married couples accounted for almost 80 percent of all households; over 60 percent of new households added during that decade were also married couples. Since 1970, however, married couples constitute a smaller and smaller share of total households as more couples delay marriage, divorce, or simply live together. As Figure 2 illustrates, the number of married couple households increased by only 250,000 each year between 1975 and 1980, compared with an annual growth of all households of 1.6 million. As a result, married couples accounted for less than 15 percent of total household growth during this period, the lowest share ever recorded.

Despite these trends, the Census Bureau's projections for the 1980s imply a resurgence in married couple households above levels observed in the 1970s, and that families other than married couples will continue to grow at approximately the same rates as in the past decade. There is little reason to expect, however, that marriage rates will increase. Since "other families" consist primarily of women with children, for this group to continue growing would require illegitimate births to increase above 1970s levels and divorces to involve more women with children. Since fertility is declining, neither of these events is likely.

FIGURE 2

Annual Increase in Number of Households by Type:

1950-1980 Observed and 1980-1990 Projected



\*Census Bureau Series B.

Sources: <u>Current Population Reports</u>, Series P-20, Nos. 345 and 366; Series P-25, No. 805.